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Systems for Reviewing Educational Data, including Special Education Information: Four State Approaches

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INTRODUCTION

The U.S. Department of Education (ED) has recently adopted a variety of education reform efforts, one of which focuses on integrated data systems. The purpose of an inclusive data system is to connect and coordinate “all parts of the system to allow important questions related to policy, practice or overall effectiveness to be asked, answered and incorporated into effective continuous improvement” (U.S. Department of Education, 2010).

The first initiative calls on states to build data systems that measure student growth and success and inform teachers and principals where instructional improvement is needed. These statewide longitudinal data systems are expected to expand and adapt to include or integrate data related to, among other components of education, special education, English language learners, early childhood, students who are at risk of falling behind and dropout prevention and school climate.

ED has implemented several initiatives to promote the development of comprehensive longitudinal data systems. For example, construction of such a system was a priority required under the Race to the Top initiative funded under the American Recovery and Reinvestment Act of 2009 (ARRA). However, funding was originally initiated in 2002 with the Statewide Longitudinal Data Systems (SLDS) grant program funded under the Educational Technical Assistance Act of 2002. This funding was targeted to help state education agencies (SEAs) develop and implement longitudinal data systems. The data systems developed with these funds are intended to help states, districts, schools and teachers make data-driven decisions to improve student learning, as well as facilitate research to increase student achievement and close achievement gaps” (U.S. Department of Education, Institute of Education Sciences [IES]).

These competitive three-to-five-year grants (providing up to \$20 million per grantee) have been awarded through three rounds of funding enabling 41 states and the District of Columbia to begin work on their state data systems.

This document provides information on several states’ longitudinal data systems. The information was gathered through a survey and interviews. Project Forum developed this

document as part of its cooperative agreement with the ED's Office of Special Education Programs (OSEP).

METHODOLOGY

Project Forum designed a brief survey that allowed state directors of special education to give their perspective about their state's ability to cross tabulate data from multiple sources or across multiple data elements and volunteer to be interviewed. Fourteen states agreed to be interviewed. Thirteen of these states received funds from the National Center for Educational Statistics (NCES) to assist in the development and implementation of their SLDS.¹ Of these 13 states, 10 reported the majority of SLDS categories to be either 'operational' or a 'work in progress' in their state as of fiscal year 2009. As of January 2010, five of these 10 states had taken at least three of the 10 actions to ensure effective data use as recommended by the Data Quality Campaign.² Four of these five states, *Kentucky*, *Missouri*, *New York* and *Virginia* agreed to participate in in-depth interviews that were intended to provide detailed information about state-level systems of education data review that include special education information.

Interview data were collected via phone between January and March 2011. An interview protocol was sent to each participant prior to the interview. A qualitative software analytic tool, *Atlas.ti*, was used to identify themes within each state interview and further analyze the data. The findings are reported in the following sections in the form of state case studies.

FINDINGS

Kentucky

Background Data System Information

Kentucky's SEA supports a prekindergarten to age 20 (P-20) consortium that has a goal to link various data sets to produce a more robust student information system. The P-20 consortium consists of SEA staff, local education agency (LEA) and school staff, the professional standards board and the Council of Higher Education. Through the work of this consortium and the SLDS grant, *Kentucky* has moved from an enterprise-type data system to a more 'open house' system where users can look at the different silos of data and bring them together on an as-needed basis rather than housing all the data in one location. One of the main pieces of this 'open house' system is the student information system that has been in place as a case management tool for schools for years. It consists of statewide data, including individualized education program (IEP) data, from preschool through 12th grade. This information system is not necessarily a longitudinal system, but in conjunction with the newer system, users will be able to review data longitudinally.

¹ Information about the NCES' SLDS grant program can be found at <http://nces.ed.gov/programs/slids/stateinfo.asp>.

² The Data Quality Campaign's 10 state actions for ensuring effective data use are: 1) link data systems (8 states have taken this action); 2) create stable, sustained support (7 states); 3) develop governance structures (24 states); 4) build state data repositories (33 states); 5) implement systems to provide timely access to information (0 states); 6) create progress reports using individual student data to improve student performance (10 states); 7) create reports using longitudinal statistics to guide system-wide improvement efforts (17 states); 8) develop a P-20/workforce research agenda (16 states); 9) promote educator professional development and credentialing (0 states); and 10) promote strategies to raise awareness of available data. More information about the Data Quality Campaign's essential actions can be found at www.dataqualitycampaign.org/survey/actions.

While *Kentucky's* special education staff did not have direct involvement with writing the SLDS grant, the state staff writing the grant application interviewed them about data required for IDEA section 618, the state performance plan/annual performance report (SPP/APR) and other programmatic needs. The consortium is now working with *Kentucky's* Part C lead agency to test the SEA's ability to receive specific, limited information about children served by Part C (birth through age two) in order to facilitate the transition for eligible children to preschool Part B. When the Part C system test is complete, these Part C programs will essentially mimic LEAs, complete with demographic information about each young child already in the student information system to ensure more seamless transition from Part C to preschool.

Special education data were not purposefully included from the beginning because these data exist in various repositories accessed through the 'open house' data system. By using the state student identification number for a student with disabilities, the system can link to all information for that student across all repositories.

Funding for *Kentucky's* 'open house' data system began with state funds for the student information system. Two SLDS grants supplemented the state funds. LEAs pay an annual system maintenance fee based on their student population. Kentucky has applied for Gates Foundation money and is waiting on an announcement.

The governance structure for *Kentucky's* data system was developed by the P-20 consortium. The SEA has a data policy committee made up of data managers and stewards from different offices within the department. This committee has determined policy needs, ownership of data and definitions. The state special education advisory group has also developed standards for data that must be captured. Since an SEA-wide reorganization was begun approximately eight months ago, this governance structure is evolving.

Data Use and Quality

Kentucky's data system was initially designed for internal SEA use only. Once confidentiality and security issues were resolved, use expanded to other state agencies and LEAs. Ultimately, the state expects that researchers and the public at large will have limited access to the active 'open house' system rather than just the reports available on the web. Soon, teachers will have access to the system for input and retrieval of information. Each LEA will set up accounts for teachers with access to different areas of the information system depending on their connection with the student. LEAs and schools also have the option to purchase access for parents to a portal for a small cost per child per month. Some LEAs have purchased this access.

Kentucky is dealing with the issue of data quality by building systems that make it nearly impossible to enter incorrect data. For instance, the use of drop lists and not allowing further input when a cell is unfilled secures a degree of accuracy. Data managers still run queries to check each data requirement and dialogue between the SEA and LEAs takes place to ensure accuracy and completeness.

The SEA works with LEAs on entering data into the system and ensuring that IEPs created within the student information system meet federal, state and local requirements. As LEA staff become more proficient using the system, the data becomes more accurate and valid. The SEA conducts training regionally at the beginning and end of the school year for local special education directors to understand what is in the system and how to use it.

Benefits and Challenges to Development of the Data System

The development of the data system in *Kentucky* has allowed valid comparisons to be made between the performance of students with disabilities and all other students. It has revealed weaknesses in the curriculum provided to students with disabilities and the benefits of specific placements over other environments for certain students.

Kentucky's biggest challenge is the changes in data requirements at the federal level, particularly least restrictive environment (LRE) and preschool race/ethnicity categories that were recently changed. The interviewee indicated that, as a result, staff are unable to compare information longitudinally, particularly in the area of preschool, because race/ethnicity data are not comparable.

Missouri

Background Data System Information

From the beginning of *Missouri's* work on their data system, all areas, including special education, were represented by data stewards. The stewards informed each other about what data elements were needed and what policy questions were to be asked of the system. Students with disabilities, including preschool students and young children served by Part C³, were included in the system from its inception. Although Part C has a separate collection system, the data are linked into the SLDS. The *Missouri* system has a number of repositories or aggregate systems built to answer specific questions. The state is developing a comprehensive data system (warehouse) that will be linkable across years and data points for individual students. Their assessment data have been linkable since 2006. Their IDEA data will be linkable soon.

Although *Missouri* received an SLDS grant, the state has applied a formula to supply funds for the system since 2005. The formula is based on the distribution of students in the state. For instance, students with disabilities comprise 14% of all students, so IDEA federal funds cover 14% of the costs of the system.

Missouri's SEA also maintains a legislated P-20 Council that designed a governance structure. As covered by the structure, each state agency owns its data and shares those data based on memoranda of understanding between individual state agencies. The governance structure outlines how group data can be used. In order to maintain security and confidentiality, the Council developed a policies and procedures manual. This manual delineates that certain users have access to certain pieces of information and, to release information, they must submit a detailed rationale for legal counsel review. The state has designated three levels of data, each with differing processes for release: 1) most identifiable; 2) de-identifiable; and 3) aggregate/public domain. The Council has also designed business rules based on relevance checks of the data and checks to determine quality of the data. Further, coding rules add another level of checks in the data system itself (e.g., all cells must be filled to continue inputting data). Although the standardization process across the system (i.e., business rules, coding rules) continues to evolve, the state still finds it challenging to get standardized data from the LEAs because they use a variety of vendors.

³ Part C's lead agency in *Missouri* is the SEA.

School Interoperability Framework Information

Missouri's system is developed to show linkage between data elements such as student outcomes across disaggregated student groups, (e.g., outcomes for students with disabilities across LEAs). The state can currently link student outcomes to teachers and are working on a definition of 'teacher of record' through a review of how LEAs define it. The SEA is collaborating with other agencies (e.g., social services) to link information about children served by early childhood (including Head Start) to the current SEA data system. The state is also working with institutions of higher education (IHEs) to link post-secondary student data (e.g., college completion, grade point average [GPA]) back to the SEA data system. Teacher preparation colleges are interested in knowing areas of teacher shortage in the state.

Data Use and Quality

Missouri's data system is designed to ultimately be used by all stakeholders (e.g., SEAs and federal reporters, parents, teachers and students). The efforts to link longitudinal data are making the data more accessible for researchers as well. For instance, the University of Missouri, Columbia uses non-student identifiable data to study student growth and conduct program evaluations. In regard to students with disabilities specifically, the data system allows for standardized reports linking assessment data, accommodations, disability categories and disability status. The SLDS grant will fund the development of more reports. At this time, teachers do not have access to local data to assist in planning instruction or performing gap analyses. Administrators also do not have real-time data for decision making. However, the state plans to create a system to funnel the data back to the local level.

Other uses of the data include plans for LEA accreditation based on indicators drawn from the system, pipeline measures such as how long it takes a student to graduate and disaggregated data on drop out and graduation rates of groups of students. Through the use of SLDS grant funds, *Missouri* is developing a method within its data system to share mobility information across LEAs. The state is also working with bordering states to share information on student mobility across state borders.

The state has invested in certifying training teams to help schools use their data. These teams help school principals and school boards with the analysis of their local data. Not much work has been done with analyzing longitudinal data at the local level, but the state expects that to begin soon. The focus will be on frequent student progress monitoring data reviews to encourage high performance of schools.

Missouri's business rules for use of the data system force reporting from each LEA by due dates. State staff provide training, due date alerts for LEAs on timelines and penalties for tardiness such as withholding payment and public reporting by mid-July with or without the data. To ensure accuracy, the business rules mandate checks on bimonthly cycles. These checks follow student mobility as well as other student-level data. The state then notifies LEAs of any potential problem and requests validation of a correction of the problem within a week. The fact that LEAs are required to hire auditors to review financial data, send all reports go to the state level, and correct any findings helps ensure quality reporting of data.

Benefits and Challenges to Development of the Data System

The benefits of *Missouri's* data system are myriad. For instance, decision makers are able to access the data and use it to inform local-level improvement planning. This process encourages more consistency across the LEAs to the state and allows transparency so everyone knows what is working well and what is not. Availability of data also allows for cross coordination of programs and results in a breakdown of silos.

Missouri believes that while they have done much development of their data system, the challenges are becoming clear in terms of ongoing funding and capacity needs. One ongoing challenge is responding in a timely fashion to federal government requests for a new data element given that vendors need 12-18 months to ramp up for these changes. Another challenge has been coordinating between the LEA-level data person and their colleagues (e.g., principals, Title I coordinator, special education coordinator) to ensure that the data are accurate.

New York

Background Data System Information

Prior to implementation of the *New York* centralized data warehouse (called the student information repository system [SIRS]), the state collected individual student assessment and demographic data for both general and special education students. During the 2005-06 school year, the state made a conscious effort to collect this data through its warehouse. In 2007-08, additional required data elements were added to SIRS in order to report on SPP indicators. Currently, the SIRS is able to include data for preschool students with disabilities and plans to enable linkages between the Part C and Part B systems in the future. The Department of Health, the Part C lead agency, has been working with the SEA to assign 'student' identifiers when infants and toddlers enter the system.

The administrative portion of federal funds (e.g., Title I) supported the development of *New York's* data system. The state has more recently received two SLDS grants and Race to the Top funds to support current growth in the system. When the state applied for Race to the Top funds, the state legislature also appropriated infrastructure money. The state uses funds to pay for its platform, Oracle. LEAs contract with the regional education service agencies for their data services. The state recently hired 12 staff solely for information technology, including developers, programmers and database administrators. Approximately two project manager positions were also recently funded to begin two new data quality projects. One project manager develops verification and other reports and one handles projects related to data quality. The data quality projects include building a technical assistance center to help LEAs deal with their data and another center, the Student Management System Certification Center, to review student management systems for their ability to meet state and federal reporting requirements.

New York's governance structure that guides data collection has been in use for some time, although interviewees reported that the structure for sharing and use across program areas in the SEA has not been fully implemented. While data are with regional education service agencies, the LEAs still own the data. Once the data move to the certification process, ownership resides with each program area's data steward. More specific information regarding

New York's data collection points, data flow and business processes is available from the state's SIRS manual.⁴ Interviewees felt fortunate that, in the past, U.S. Department of Education's FERPA⁵ staff were able to visit and give state staff guidance about restriction of access to protect family privacy. The state has since developed a secure portal and websites for viewing data and transferring information through virtual private networks.

School Interoperability Framework Information

New York's SIRS allows LEAs to use the aggregate report and drill down to specific students for conducting their special education verification. These data include student outcomes linked to disability status, disability category, ethnicity and more. A plan for determining who the 'teacher of record' is for individual students was piloted during the 2010-11 school year and will be fully implemented in 2011-12.

Data Use and Quality

New York is building an instructional information component into the system for use by administrators and teachers to help LEAs improve instruction and has plans for parent and student portals. There will also be a mechanism for student record exchange, first with public and later with private colleges and universities.

The SIRS manual⁶ specifies processes and timelines for certification of data for quality and LEAs can verify their data once it is aggregated by the state. Checks are built into the process at early stages and the SEA works closely with special education system vendors to ensure that their systems provide the required information in the appropriate format. The SEA also sends reminders to LEAs prior to information being due.

New York continues to merge special education data into SIRS and has provided training to LEAs through the regional education service agencies. Development of the technical assistance data center will continue building the data management capacity of LEA staff, particularly special education data coordinators. When the state completes the data certification system, LEAs will be able to see and use their data as soon as they enter it.

Benefits and Challenges to Development of Data System

The major benefits for *New York* in the development of its SIRS have been in public awareness of what affects and supports students and the improvement of student results due to the resulting support for programs that work.

Staff see challenges at both the SEA and LEA levels. At the LEA level, it has been difficult to break down barriers between program areas. At the state level, much staff time is used to write requests for proposals, review the proposals and award work. In order to overcome

⁴ New York state's SIRS manual Chapter 2 discusses SIRS structure and can be found at <http://www.p12.nysed.gov/irs/sirs/>.

⁵ FERPA refers to the Family Education Rights and Privacy Act (20 U.S.C. § 1232g; 34 CFR Part 99), a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.

⁶ New York state's SIRS manual Chapter 5 discusses SIRS processes and can be found at <http://www.p12.nysed.gov/irs/sirs/>. The State Performance Plan School District Schedule for Data Submission for Federal Indicators gives the timelines through 2010-11 school year and can be found at <http://www.p12.nysed.gov/sedcar/spps/schedule.html>.

these challenges, the state has modeled an administrative organization that collapses the silos at the state level. Also, the SEA holds weekly calls with the regional education service agencies about new data system initiatives and approaching deadlines.

Virginia

Background Data System Information

Although *Virginia's* special education unit was not directly involved in the development of the state's longitudinal data system, special education data are integrated and no redundant information is collected. Due to the SPP reporting needs, the unit collects information over and above what is collected for other students, but student-specific information is integrated through the use of unique student identifiers. The state's collection of data for students with disabilities includes preschool, including children aged birth to two in LEAs that serve this group in preschool programs, but does not connect with the Part C agency's data collection for infants and toddlers served through Part C.

Building the initial data system was funded through state funds. This system was developed to assign unique student identifiers for ESEA and to make data accessible to LEAs and the SEA. An SLDS grant and IDEA funds have enhanced and expanded the function of this base system and support one executive director of research who contacts universities and other professional organizations to conduct research. The money also supports leasing servers.

As part of the *Virginia* data system, data stewards take responsibility for managing their own program area's data (e.g., special education). These stewards meet monthly to make decisions. Currently the system of ownership is informal.

School Interoperability Framework Information

Virginia was one of the early adopters of the School Interoperability Framework (SIF). The use of this framework is optional for LEAs, but 128 out of 132 use it. SIF is used primarily for the assignment of unique student identifiers. The framework can be used to share electronic transcripts with colleges and universities as well as to connect teacher and student data.

Because of the unique student identifier, IDEA data can be linked to other data sources such as state assessments. The SEA also links ACT and SAT results to students, follows postsecondary enrollments and performance, links literacy screening results to students and collects student schedules. The strongest use of the linked data in *Virginia* is the 'watchlist report' that the SEA provides to LEAs and is a projection based on data elements that help identify students at risk of not succeeding. This is used as an early warning system that can be supplemented with more current, local data such as test grades.

A cross-agency group is working to define 'teacher of record' by September 2011. Recognizing that multiple teachers can contribute to students' education, the state will likely develop multiple definitions for roles teachers might play in relation to a given student and/or within a specific course.

Data Use and Quality

Virginia's system is designed to produce standardized reports including any report needed for the SPP. The state's guiding principle is to collect data once and use them many times. In order to ensure that this is adhered to, any data collection request must be approved by the director of educational information management. Once a data request is approved and collected, the data are shared via a secure 'drop box'. Also, there is only one data collection portal and standards are applied so that all applications have a common look and feel, are Section 508 compliant and follow standards so that everything is supportable on one platform. The state shares only what is required to be publicly available unless an organization has a contract that has a restricted use clause with the SEA. The data stewards are ultimately responsible for the quality of the data.

The state has a wealth of publicly available data on their website and follows state and federal requirements for state report cards. This information is available for parents and other interested parties. Also, when the state produces a specific report for LEAs, parents can get it from the state or through the LEA's website unless it contains identifying student information.

Virginia has made great strides in ensuring the timeliness of the reporting. For example, since most LEAs use online testing, the state assessment vendor loads scores into the data system each Sunday for assessments taken the prior week. In order to ensure the accuracy of data that are reported, the SEA has developed levels of certification. Each LEA is required to complete a data cleaning procedure prior to submission of its October 1 student count and a final edit is conducted by the superintendent of schools.

Benefits and Challenges to Development of Data System

The most important benefit of *Virginia's* data system is that the SEA now has accessible and high quality data and a reduced reporting burden on the LEAs. Most of the challenges have been related to LEAs' capacities to report data, but not specifically special education data. Complying with IDEA reporting requirements has been a significant challenge because of changes to section 618 data table requirements and section 616 SPP/APR requirements. To overcome some of the challenges, *Virginia* included LEAs in the decision-making process and continues to communicate with them. The state believes this has given LEAs a sense of ownership.

CONCLUSION

Each of the four states that were interviewed self reported that their education data systems function as either 'operational' or 'in progress' for a majority of SLDS categories and that their states had taken at least three of the 10 actions to ensure effective data use as prescribed by the Data Quality Campaign. Still, all of the interviewees felt their state data systems have specific strengths and room for growth. For example, *New York* was able to describe how the state governance structure guides data flow and protects privacy and described how they are improving their data system to report instructionally relevant information and provide a parent/student portal for access to individual student information.

While none of the SLDS categories or Data Quality Campaign categories deal specifically with special education data, they all support coherence of data and use of data for improving student outcomes, both key areas for special education personnel. However, IDEA regulations require specific data collection that is not included in either of these quality assurance tools

(i.e., SLDS and Data Quality Campaign), the SPP indicator data. Each of the states noted that the SPP indicator data has to be collected separately from other sources. *Kentucky*, *Missouri* and *Virginia* noted that the change in federal data requirements in special education over the years causes them hardships such as the inability to compare across years and difficulty bringing data systems into alignment with these changes in a timely fashion.

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